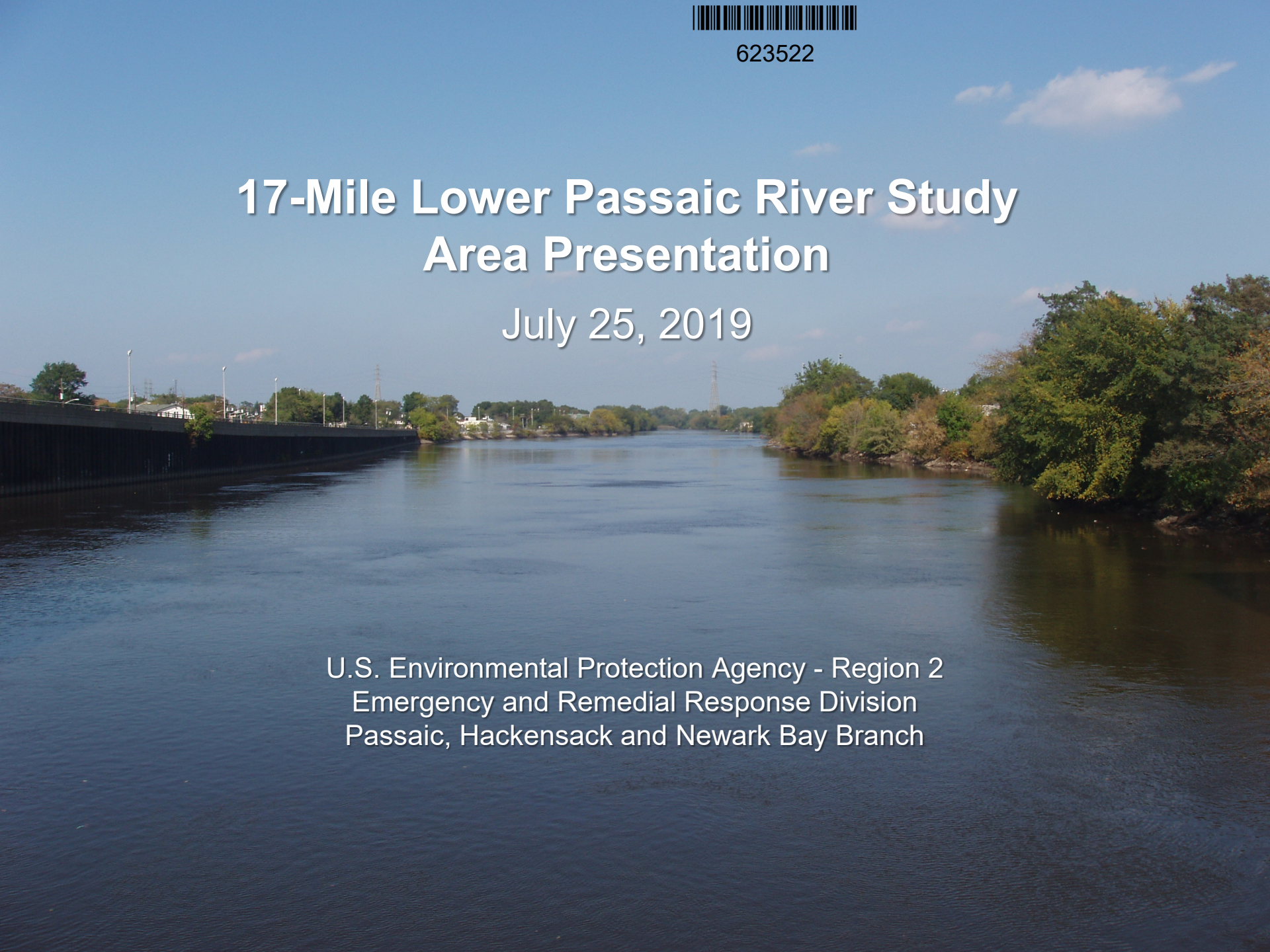
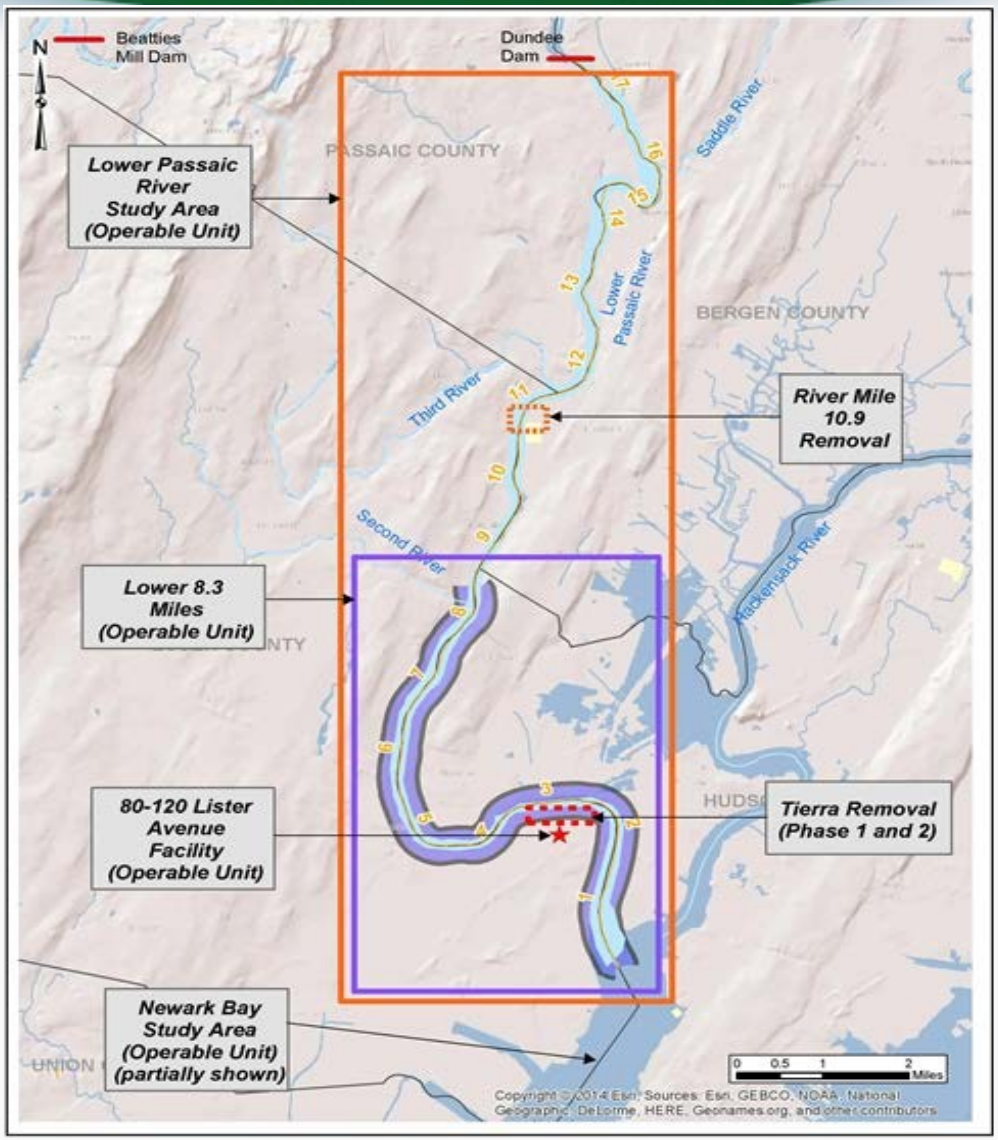
623522

17-Mile Lower Passaic River Study Area Presentation

July 25, 2019



U.S. Environmental Protection Agency - Region 2
Emergency and Remedial Response Division
Passaic, Hackensack and Newark Bay Branch



Diamond Alkali Superfund Site Overview:

- 80-120 Lister Avenue (Operable Unit 1)
- Lower 8.3 miles of the Lower Passaic River (Operable Unit 2)
- Newark Bay Study Area (Operable Unit 3)
- 17-Mile Lower Passaic River Study Area (LPRSA) (Operable Unit 4)

Diamond Alkali Superfund Site History

1984: EPA lists Diamond Alkali Site as a National Priorities List (Superfund) Site

1987: Interim Record of Decision for containment remedy including the following at 80-120 Lister Avenue facility:

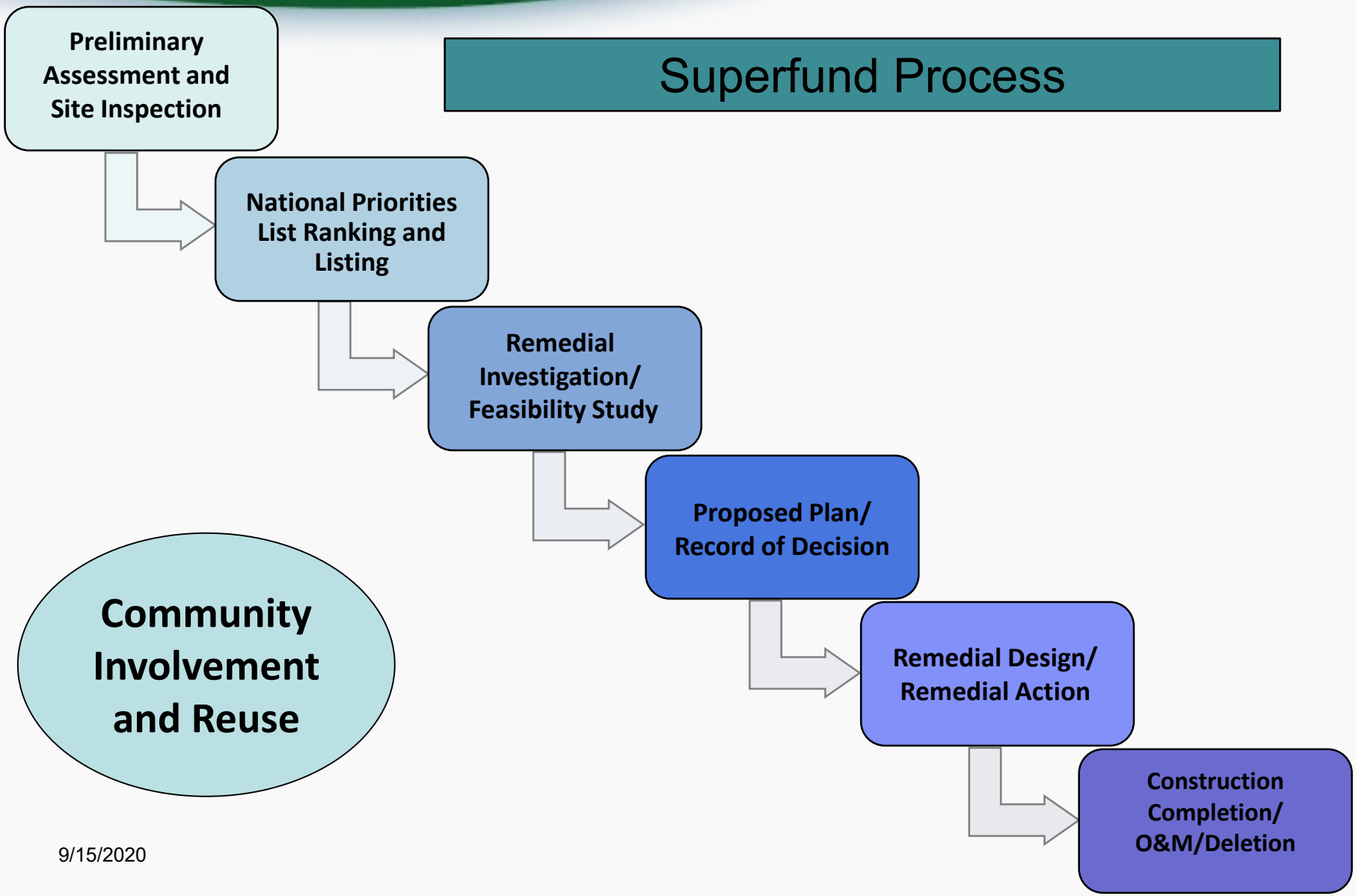
- capping,
- subsurface slurry walls, and
- a groundwater collection and treatment system

Mid-1980s: Occidental, under agreement with the State of NJ, determined that dioxin was in the river adjacent to their facility

1994: Occidental and EPA signed an agreement to investigate the river

By 2002: EPA expanded the investigation to the 17-mile tidal portion of the river

Superfund Process



Lower 8.3 Miles Update

Alice Yeh, Remedial Project Manager

9/15/2020

Status of the Lower 8.3-Mile Cleanup

- **Record of Decision: March 2016**
  - **Engineered cap, bank-to-bank, over lower 8.3 miles**
  - **Before cap is placed, dredge 3.5 million cubic yards of contaminated sediment**
  - **Dredged sediment dewatered locally and transported off-site for disposal**
  - **Estimated cost of cleanup: $1.4 billion**

- **Legal Agreement for Design (Occidental): September 2016**
- **Design: 2016-2020**
  - **Pre-Design Investigation: 2016-2019**
  - **Design Documents: 2019-2020**
- **Negotiate Legal Agreements for Cleanup (~100 parties): 2016-2021**
- **Cleanup: Beginning in 2021, lasting approximately 6 years**

17-Mile LPRSA Update

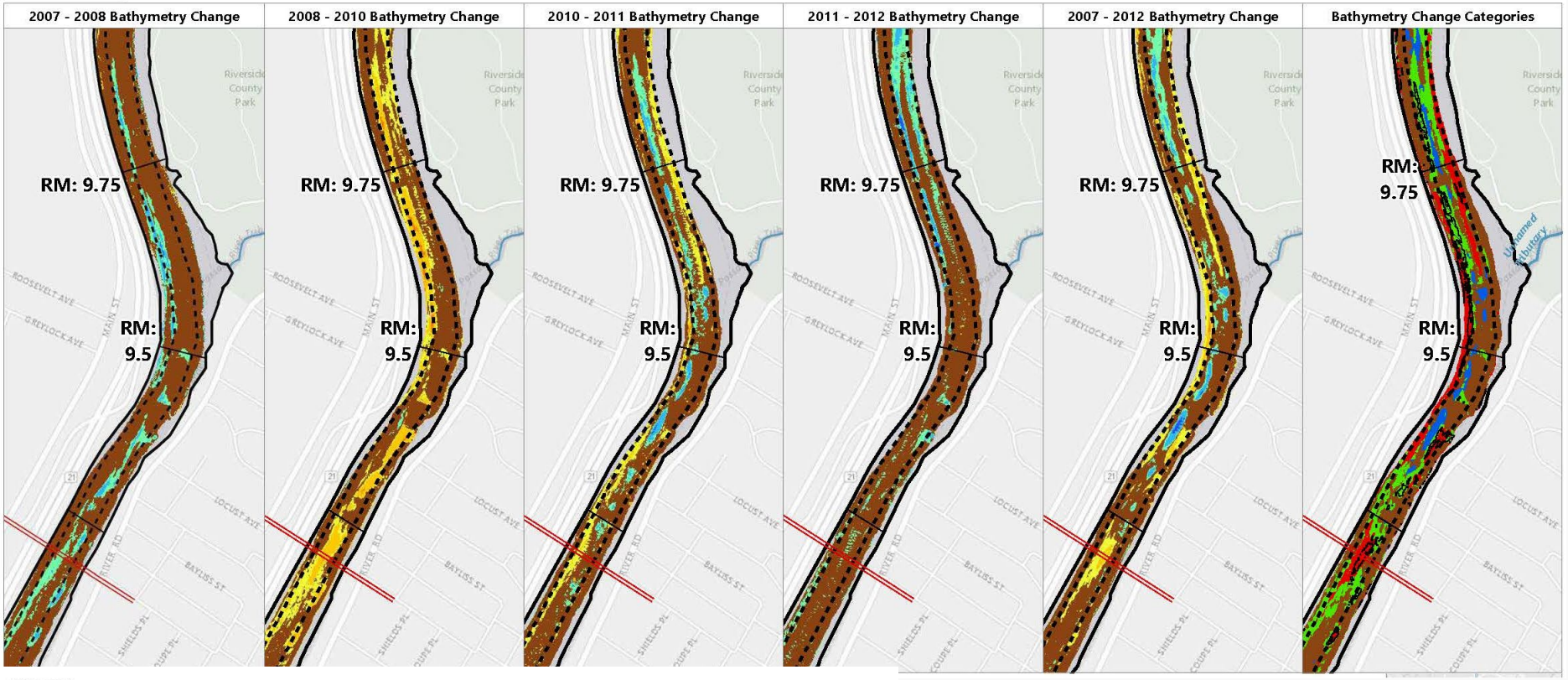
Diane Salkie, Remedial Project Manager

9/15/2020

Remedial Investigation Field Investigations Included:

- Bathymetry Surveying – Depth of water over time that shows where sediment is likely to erode and deposit
- Water Column Sampling
- Sediment Sampling
- Biological Sampling

Bathymetry Evaluation – Erosion and Deposition Over Time



Legend:

- Subreach Boundary
- Navigational Channel
- Shoreline

Bathymetry Change (feet)

>5	-1 - -0.5
2 - 5	-2 - -1
1 - 2	-5 - -2
0.5 - 1	<-5
-0.5 - 0.5	

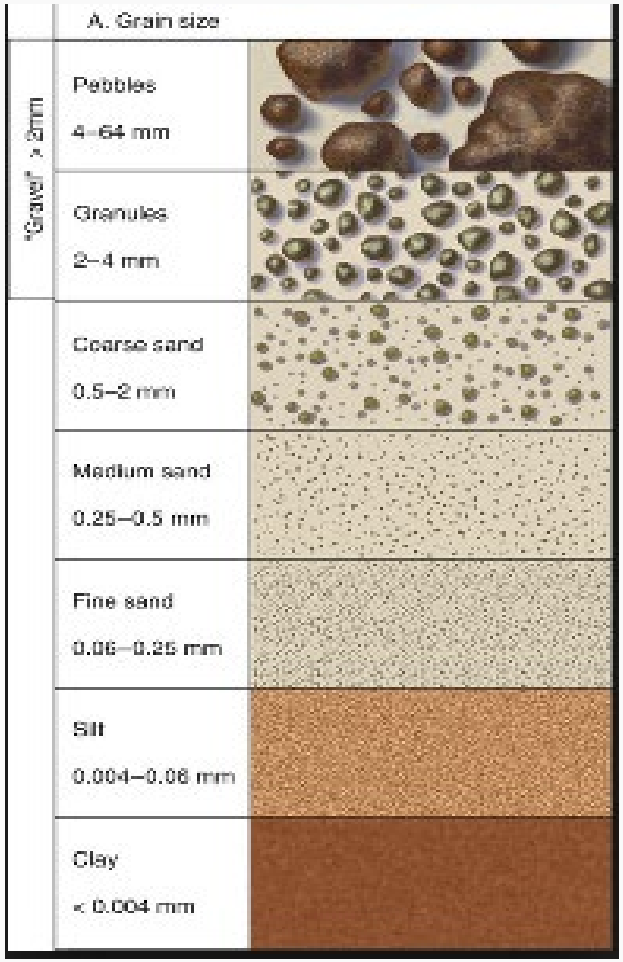
Bathymetric Change Categories

- Depositional from 2007 to 2012
- No Change / Temporarily Depositional
- Erosion and Deposition
- Erosional from 2007 to 2012
- > 1.5 feet of Erosion

NOTE(S):
Positive bathymetry change indicates deposition denoted in blue.
Negative numbers indicate erosion denoted in red.
Shoal bathymetry derived from single beam data for 2007, 2011 and 2012.

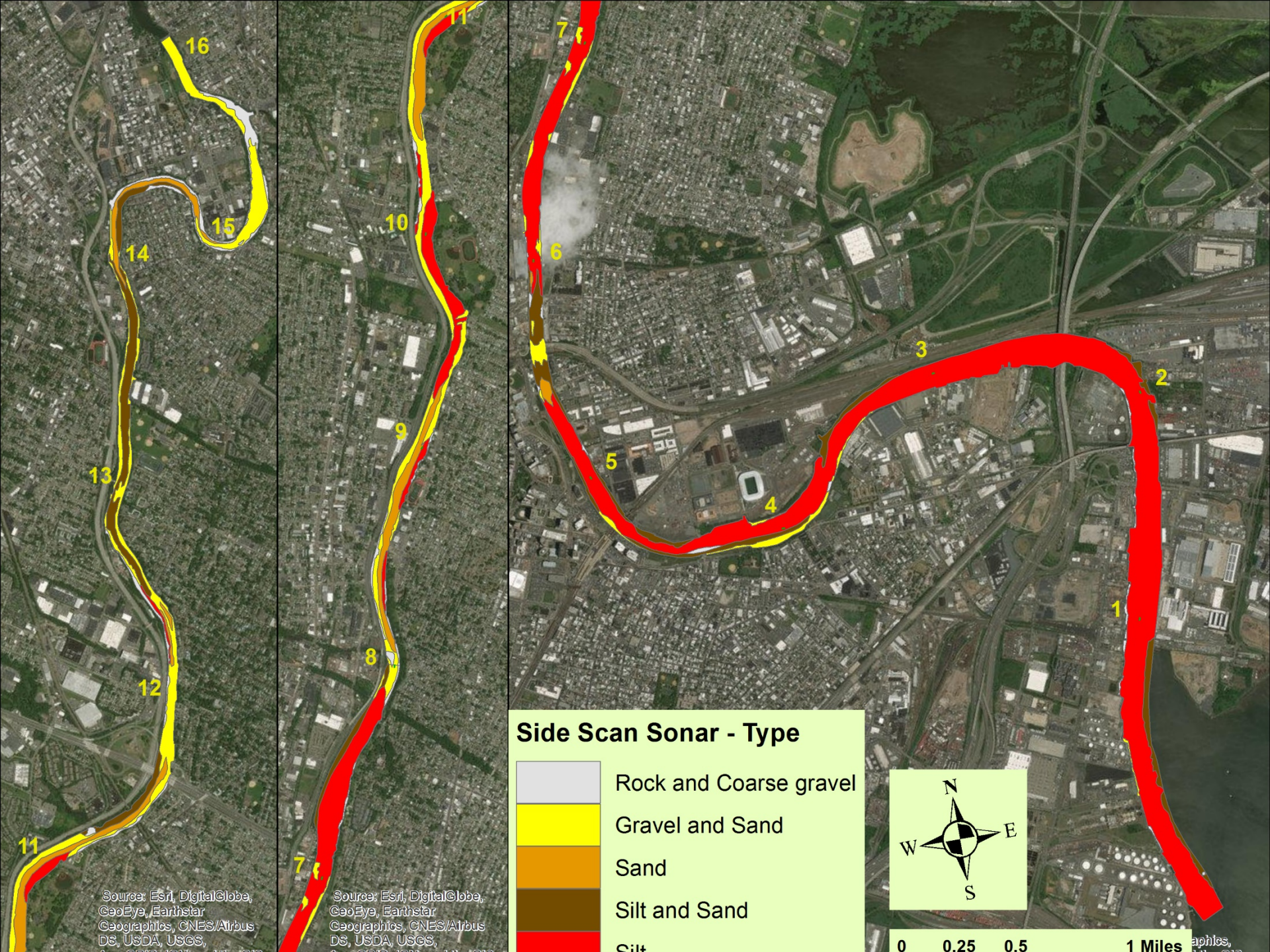
Source: LPRSA Draft RI Report, 12/17 (Anchor QEA, in preparation

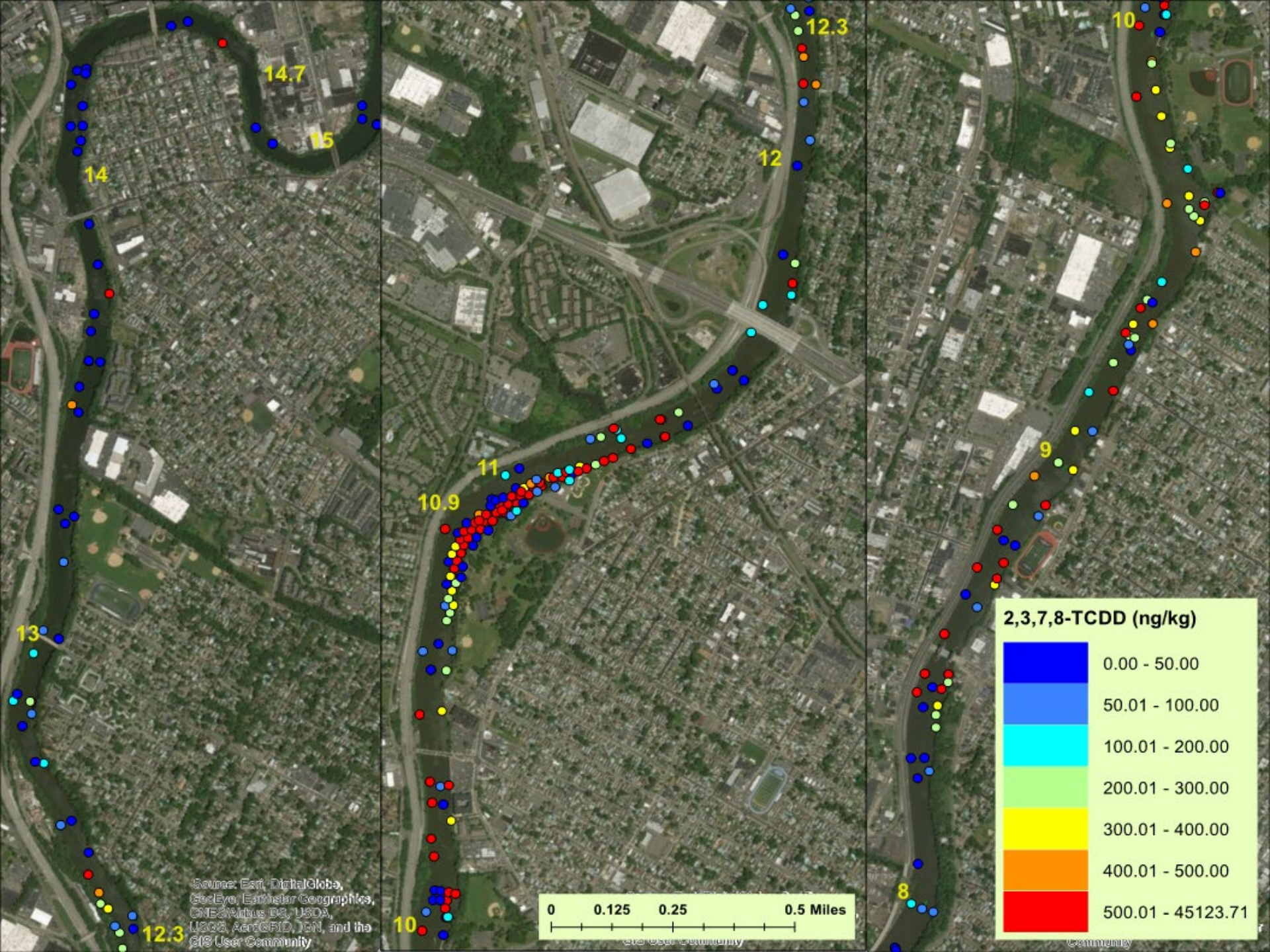
Sediment Particle Sizes

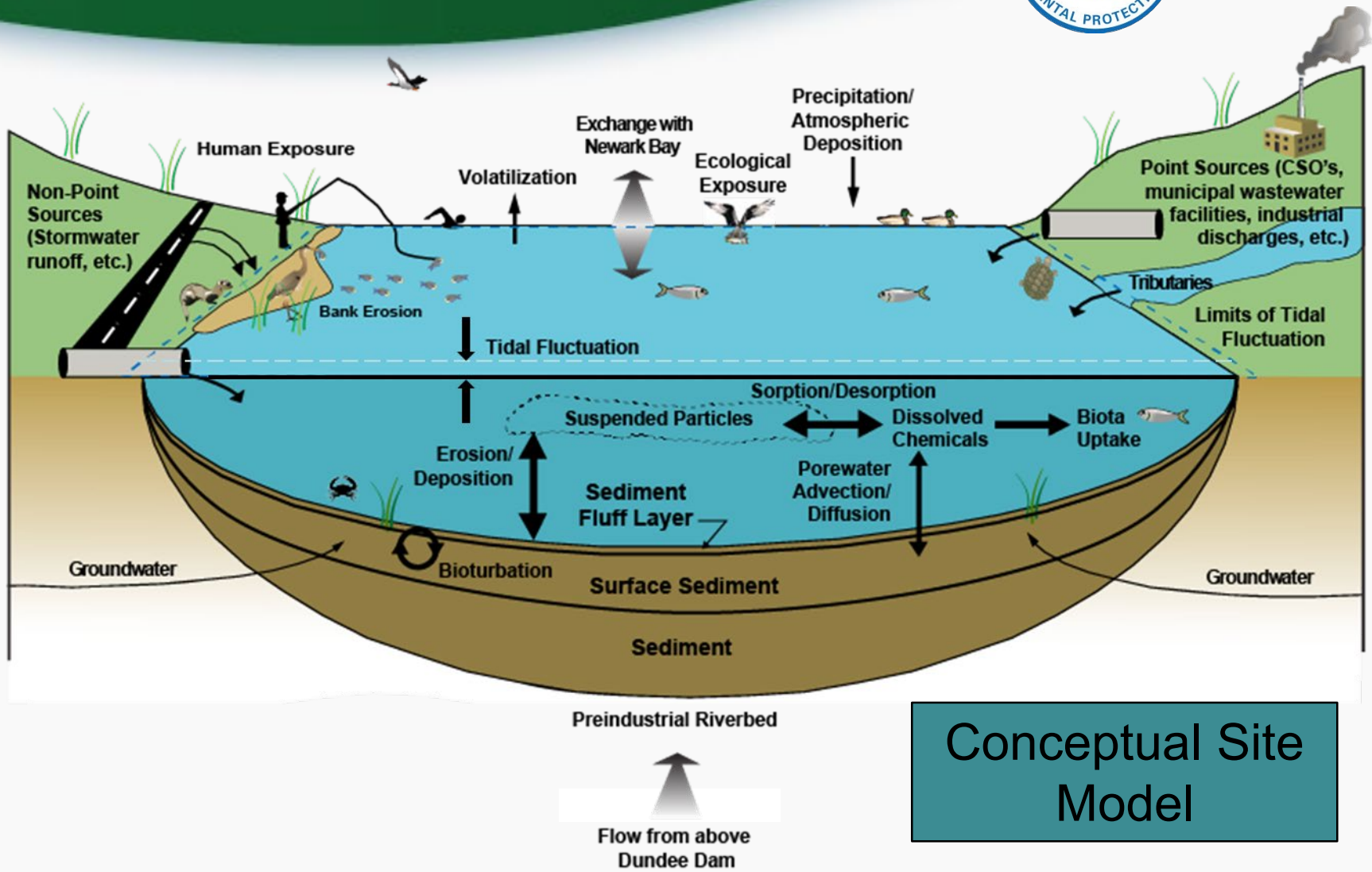


Coarse-Grained Sediment

Fine-Grained Sediment


Side Scan Sonar - Type
Rock and Coarse gravel
Gravel and Sand
Sand
Silt and Sand
Silt
N
E
S
W
0
0.25
0.5
1 Miles
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,


14.7
15
14
13
12.3
10
11
10.9
12.3
12
10
9
8
2,3,7,8-TCDD (ng/kg)
0.00 - 50.00
50.01 - 100.00
100.01 - 200.00
200.01 - 300.00
300.01 - 400.00
400.01 - 500.00
500.01 - 45123.71
0
0.125
0.25
0.5 Miles
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Conceptual Site Model

Source: Modified from U.S. EPA - Contaminated Sediment Remediation Guidance for Hazardous Waste Sites, December 2005

INTERIM REMEDY POTENTIAL FOR THE UPPER 9 MILES

Michael Sivak

9/15/2020

Rationale for Interim Remedy

- High degree of certainty
  - Sediment sources exist and limit system recovery
- Lower degree of certainty
  - Setting final risk-based sediment goals
  - Estimating time to reach final risk-based sediment goals
- Interim remedy offers opportunity to:
  - Remove source material and reduce risk sooner
  - Share infrastructure/resources of Lower 8.3-mile remedial action
  - Complete Lower 8.3-mile remedy and upper 9-mile interim remedy closer in time
  - Perform monitoring to capture benefit of both actions
- Commitment for final Record of Decision with risk-based goals

Potential Interim Remedy

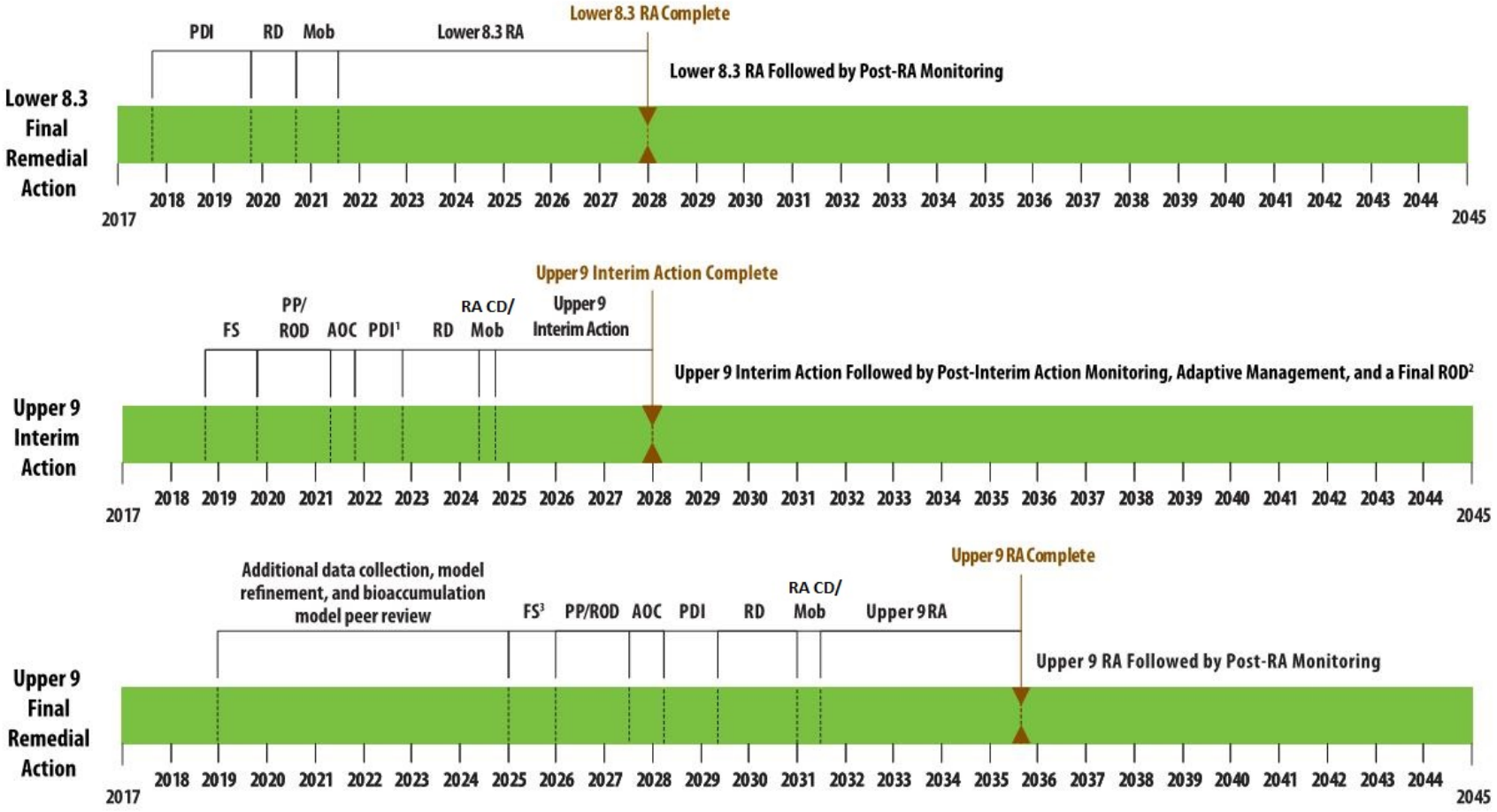
- Objective
  - Removal of most significant source areas of sediment contamination in upper 9 miles
- Anticipated outcomes
  - Reduced exposure
  - Reduced mobilization of contamination
  - Accelerated recovery in sediment and biota

Overview of Potential Interim Remedy

- **Interim Remedy – Record of Decision 1**
  - Remove source material in the upper 9 miles
  - Conduct performance monitoring
    - Confirm removal of sources
    - Evaluate system recovery
    - Assess if acceptable risk levels will be achieved
- **Final Remedy – Record of Decision 2**
  - Establish cleanup goals
  - Monitor and compare to projections of recovery
    - Develop and implement additional remediation, if and as needed

Adaptive Management

- Adaptive management principles will be applied to interim remedy process
  - New information will be used to maximize the success of the project throughout development, design, implementation, and post-interim remedy monitoring
  - Formal adaptive management framework will be developed in the interim remedy Feasibility Study
  - Data collected once the interim remedy is completed will be used to determine if any further in-river work is needed, or if sources have been addressed by the interim remedy

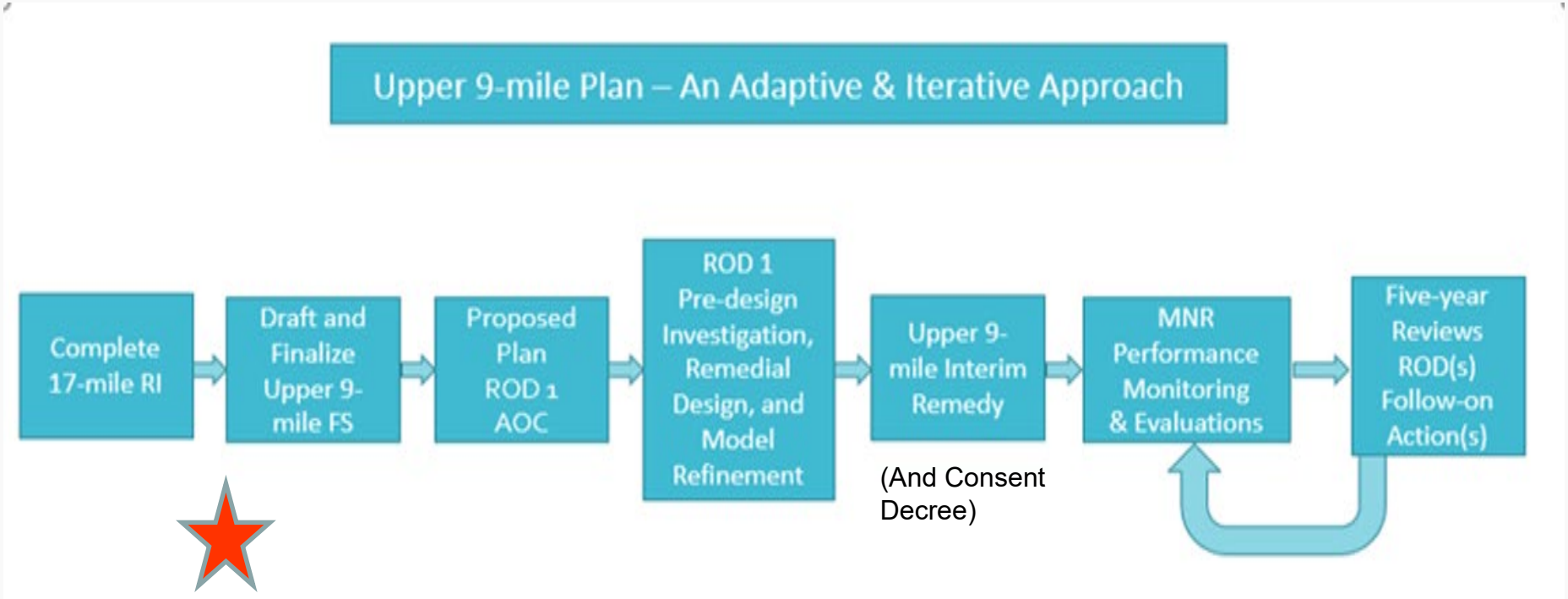


[1]Prior to the interim action PDI and in-river activity for the Lower 8.3 RA, baseline monitoring will also be implemented consistent with CSTAG recommendations.

[2]Adaptive management will include interim action performance assessment, model refinement, and modeling of recovery rates to facilitate derivation of risk-based goals and completion and implementation of the final ROD.

[3]FS would be completed pursuant to May 2007 AOC.

Upper 9 Mile Interim Remedy



17-mile RI is completed and have initiated proposed Interim Remedy FS

Interim Remedy FS Meetings

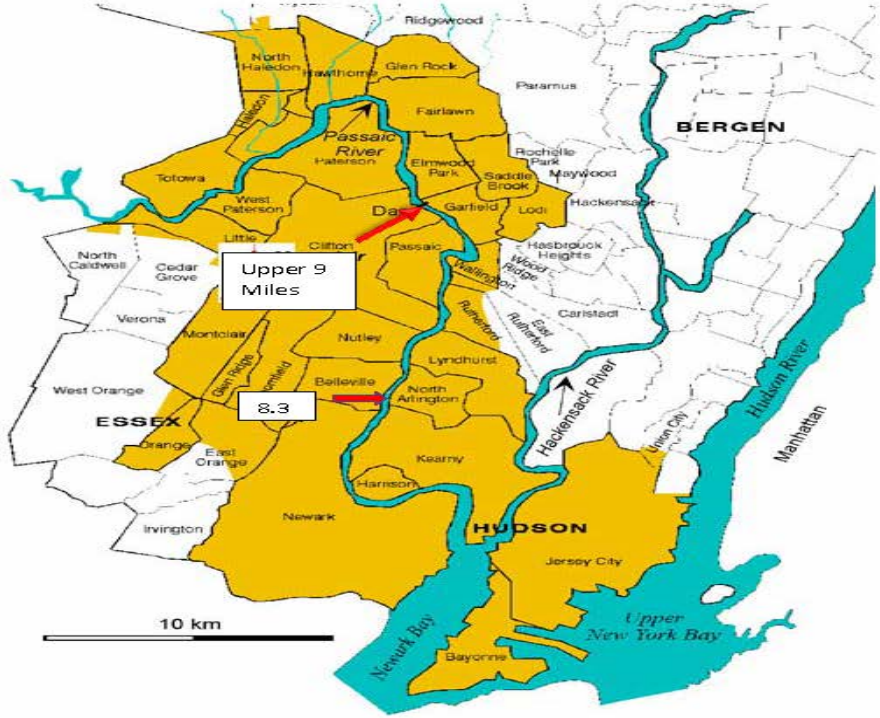
- October 2018 to December 2018
  - Regular meetings (EPA, NJDEP and CPG) to resolve critical interim remedy FS inputs
- January 30 to March 2019
  - Continued regular meetings (EPA, NJDEP and CPG)
- March to August 2019
  - Regular meetings and/or conference calls to discuss progress on draft interim remedy FS; draft interim remedy FS to be submitted in August 2019
- September to October 2019
  - Regular meetings and/or conference calls (EPA, NJDEP and CPG) to resolve interim remedy FS comments; final interim remedy FS submitted in October 2019

Current Condition Sampling

- Collecting Surface Water, Fish tissue and Sediment samples
- Starting summer 2019
- Assess current conditions in river
- Supports CPG's ongoing work and also will be used to compare to conditions after any remedial activities

Outreach for the Potential Interim Remedy

- Bimonthly CAG meetings
  - September 12, November 7, 2019
  - Looking for meeting locations along upper 9 miles
- Public availability sessions
  - Open to public
  - Present information on the nature and extent of contamination, human health, and ecological risk assessments
  - Initiate in summer 2019
  - Locations to be determined


Upper 9 Miles
8.3
10 km
Passaic River
BERGEN
ESSEX
HUDSON
Hackensack River
Hudson River
Manhattan
Upper New York Bay
Newark Bay
Ridgewood
Glen Rock
Paramus
Fairlawn
Rochelle Park
Maywood
Hackensack
Elmwood Park
Saddle Brook
Garfield
Lodi
Totowa
West Paterson
Clifton
Passaic
Hasbrouck Heights
Wallington
Wood Ridge
Carlstadt
East Rutherford
Rutherford
North Caldwell
Cedar Grove
Verona
Montclair
Nutley
Lyndhurst
Belleville
North Arlington
West Orange
Orange
East Orange
Kearny
Harrison
Newark
Irvington
Jersey City
Bayonne
Union City